

410 Rec'd PCT/PTO 2 1 SEP 2000

Form PTO-1390 (REV 1-98)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTORNEY'S DOCKET NUMBER 200-19	
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371				U.S. APPLICATION NO. (If known, see 37 C.F.R. 1.55) 09/646790	
				PRIORITY DATE CLAIMED - - - - 21 March 1998	
INTERNATIONAL APPLICATION NO PCT/DE99/00804		INTERNATIONAL FILING DATE 22 March 1999			
TITLE OF INVENTION INKJET PRINTER FOR PRINTING ON GOODS					
APPLICANT(S) FOR DO/EO/US Jan SLOMIANNY and Andreas SLOMIANNY					
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:					
1. <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371. 2. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371. 3. <input checked="" type="checkbox"/> This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1). 4. <input checked="" type="checkbox"/> A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date. 5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2)) a. <input checked="" type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau). b. <input type="checkbox"/> has been transmitted by the International Bureau. c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US). 6. <input checked="" type="checkbox"/> A translation of the International Application into English (35 U.S.C. 371(c)(2)). 7. <input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)) a. <input type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau). b. <input type="checkbox"/> have been transmitted by the International Bureau. c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired. d. <input type="checkbox"/> have not been made and will not be made. 8. <input type="checkbox"/> A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)). 9. <input checked="" type="checkbox"/> A signed declaration of the inventor(s) (35 U.S.C. 371(c)(4)). 10. <input checked="" type="checkbox"/> A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)). Items 11. to 16. below concern document(s) or information included: 11. <input type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98. 12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included. 13. <input type="checkbox"/> A FIRST preliminary amendment. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment. 14. <input type="checkbox"/> A substitute specification. 15. <input type="checkbox"/> A change of power of attorney and/or address letter. 16. <input checked="" type="checkbox"/> Other items or information: International Search Report Demand International Preliminary Examination Report Submission of Specification and Claims for Examination Communication Regarding Substitute Sheets					

(January 1998)

U.S. APPLICATION NO. (If known, see 37 CFR 1.5) <div style="font-size: 2em; font-weight: bold;">09/646790</div>		INTERNATIONAL APPLICATION NO. PCT/DE99/00804		ATTORNEY'S DOCKET NUMBER 200-19	
17. <input type="checkbox"/> The following fees are submitted: BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(5)): Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO, and International Search Report not prepared by the EPO or JPO \$970.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO..... \$840.00 International preliminary examination fee not paid to USPTO (37 CFR 1.482) but international search fee paid to USPTO (37 CFR 1.445(a)(2))..... \$690.00 International preliminary examination fee paid to USPTO (37 CFR 1.482) but all claims did not satisfy provisions of PCT Article 33(1)-(4)..... \$670.00 International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(1)-(4)..... \$ 96.00 ENTER APPROPRIATE BASIC FEE AMOUNT =				CALCULATIONS PTO USE ONLY	
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				\$ -0-	
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	8 -20 =	0	X \$18.00	\$ -0-	
Independent claims	1 -3 =	0	X \$78.00	\$ -0-	
MULTIPLE DEPENDENT CLAIM(S) (if applicable) No			+ \$260.00	\$ -0-	
TOTAL OF ABOVE CALCULATIONS =				\$840.00	
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SUBTOTAL =				\$420.00	
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.429(f)).			+	\$ -0-	
TOTAL NATIONAL FEE =				\$420.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property			+	\$ -0-	
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				Amount to be: refunded	\$
				charged	\$420.00
a. <input type="checkbox"/> A check in the amount of \$_____ to cover the above fees is enclosed. b. <input checked="" type="checkbox"/> Please charge my Deposit Account No. <u>17-0055</u> in the amount of \$ <u>420.00</u> to cover the above fees. A duplicate copy of this sheet is enclosed. c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. <u>17-0055</u> . A duplicate copy of this sheet is enclosed. NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.					
SEND ALL CORRESPONDENCE TO Joseph W. Bain Quarles & Brady LLP 222 Lakeview Avenue, Suite 400 West Palm Beach, Florida 33401					
				SIGNATURE	
				Joseph W. Bain	
				NAME	
				34,290	
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STATEMENT CLAIMING SMALL ENTITY STATUS
(37 CFR 1.9(f) & 1.27(c))--SMALL BUSINESS CONCERN

Docket Number (Optional)
 200-19

Applicant, Patentee, or Identifier: SLOMIANNY et al.

Application or Patent No.: PCT/DE 99/00804

Filed or Issued: March 22, 1999

Title: Inkjet printer for printing on goods

I hereby state that I am

- ☐ the owner of the small business concern identified below:
☐ an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF SMALL BUSINESS CONCERN EBS GmbH

ADDRESS OF SMALL BUSINESS CONCERN Am Sonnenhang 33, D-51588 Nümbrecht
Germany

I hereby state that the above identified small business concern qualifies as a small business concern as defined in 13 CFR Part 121 for purposes of paying reduced fees to the United States Patent and Trademark Office. Questions related to size standards for a small business concern may be directed to: Small Business Administration, Size Standards Staff, 409 Third Street, SW, Washington, DC 20416.

I hereby state that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention described in:

- ☐ the specification filed herewith with title as listed above.
☐ the application identified above.
☐ the patent identified above.

If the rights held by the above identified small business concern are not exclusive, each individual, concern, or organization having rights in the invention must file separate statements as to their status as small entities, and no rights to the invention are held by any person, other than the inventor, who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person made the invention, or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d), or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern, or organization having any rights in the invention is listed below:

- ☐ no such person, concern, or organization exists.
☐ each such person, concern, or organization is listed below.

Separate statements are required from each named person, concern or organization having rights to the invention stating their status as small entities. (37 CFR 1.27)

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

NAME OF PERSON SIGNING Jan SLOMIANNY

TITLE OF PERSON IF OTHER THAN OWNER managing director

ADDRESS OF PERSON SIGNING Am Sonnenhang 33, D-51588 Nümbrecht, Germany

SIGNATURE Jan SLOMIANNY DATE _____

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Am Sonnenhang 33

D-51588 Nümbrecht

Tel. 0 22 93 / 22 39 u. 502 Fax 41 07

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INKJET PRINTER FOR PRINTING ON GOODS

STATEMENT REGARDING FEDERALLY SPONSORED
RESEARCH OR DEVELOPMENT

(Not Applicable)

5

CROSS REFERENCE TO RELATED APPLICATIONS
BACKGROUND OF THE INVENTION

This application claims the benefit of PCT International Application No.
PCT/DE99/00804 entitled "INKJET PRINTER FOR PRINTING ON GOODS" filed
10 September 30, 1999, the entirety of which is incorporated herein by reference.

Field of the Invention

The invention relates to an inkjet printer for printing on goods
incorporating a computer controlling the operational process, at least one
exchangeable reservoir bottle filled with a previously known quantity of a fluid,
15 with a solvent or pigment for example, an installed intermediate container that is
recharged with fluid from the reservoir bottle and an installed arrangement
designed to detect the quantity of fluid drawn from the reservoir bottle as well
as to the use of such a bottle-shaped reservoir in such type inkjet printer.

20

Inkjet printers printing on goods typically have a considerably higher fluid
consumption like pigment fluid and solvent than inkjet printers printing on paper.
On inkjet printers of the type mentioned above which are designed for printing
on goods, the fluids needed for operation and printing, that is pigment and

solvent in particular, are supplied from reservoirs that have a volume of one liter for example.

The reservoirs to be used are desired to be, if possible, commercial, reasonably priced standard bottles. Specially shaped containers which only fit specific inkjet printers however are expensive. But this financial aspect is still overcome by another aspect. It happens over and over again that a customer refills an already used, empty reservoir but that he does not use the therefor required fluid. It also happens that not entirely matching fluids from other manufacturers are offered in at least comparable reservoirs. Not to use the appropriate liquid, a wrong solvent for example, may lead in simple cases to a poor-quality printing result and in serious cases to failure of the inkjet printer. When complaints are made, in particular when warranty claims are asserted, it is not always easy for the manufacturer of the inkjet printer to find out whether a printer was operated with the correct or with wrong fluids.

SUMMARY OF THE INVENTION

Its object is to develop an inkjet printer of the type mentioned above so that although using the simplest possible, commercial reservoir bottles, the inkjet printer automatically checks whether a newly inserted reservoir bottle is filled with the correct fluid. A particular object of the invention is to prevent unwanted confusion between two reservoir bottles filled with distinct fluids due precisely to the use of simple bottles.

Footing on the inkjet printer of the type mentioned above, the solution of this object is to provide the reservoir bottle with an externally visible label carrying coded information about the fluid it contains, e.g., an expiration date, the kind of fluid, the quantity of fluid, its viscosity and so on, to feed the label into the computer when inserting a new reservoir bottle, to provide the computer with a test program that checks the label fed and that only allows normal operation of the inkjet printer when at least one selected test criterion, e.g., the expiration date, is alright and to have the output signal of the arrangement designed to detect the quantity of fluid drawn from the reservoir bottle on the computer and to deliver a signal "reservoir bottle empty" when the previously known quantity of fluid has been drawn from the reservoir bottle.

According to the invention, each reservoir bottle has got an individual label. Its label comprises a coded information about the fluid it contains, about

its expiration date in particular. Each reservoir bottle has preferably got its own, individual label, which cannot be found with any other reservoir bottle. The label comprises further indications about the fluid like the kind of fluid, the quantity of fluid, its viscosity. The label is fed into the computer when a new reservoir
5 bottle is inserted, it may be entered by hand for example by having the label read and fed into a keyboard of the inkjet printer or mechanically by means of a scanner or even a scanning device located in the carriage supporting the reservoir in the inkjet printer.

The computer has a test program which is supplied with the label fed. Said program checks the label by comparing it with admissible labels. The label may thereby be decoded or not. Normal operation of the inkjet printer is only set free when at least one selected test criterion, e.g., the expiration date, is alright. Additionally, a device designed to detect the quantity of fluid drawn from the reservoir bottle is provided, its output signal being applied to the computer, too. Once the previously known quantity of fluid has been drawn from a reservoir, a signal "reservoir bottle empty" is delivered. Subsequently, normal operation of the inkjet printer is stopped and is only set free again when a new label has been fed.

According to the invention, the inkjet printer only accepts a new reservoir
20 bottle when the label fed is appropriate. Thus, refill and reuse of an old, emptied reservoir bottle is made impossible. The inkjet printer only accepts proper

reservoir bottles. It is thus made certain that the inkjet printer can only be operated with the fluids and can only process fluids for which it has been devised. This novel feature for example prevents a seal from being damaged, the printing results from worsening because of a wrong fluid, for example a wrong solvent, or even a dangerous operating state from occurring due to the use of an inflammable or explosive liquid for example.

Preferably, the label has got the form of a seal and is fixed on the reservoir bottle at the spot that has to be damaged when inserting it into the inkjet printer, since this is the place where the reservoir bottle has to be opened. Thus, once the reservoir bottle is inserted, the label is lost.

In a preferred development of the invention the signal "reservoir bottle empty" simultaneously suspends the tapping of fluid from the reservoir. A pump for example is stuck between reservoir bottle and intermediate container. Normal operation of the inkjet printer is only set free again after a new coded label has been fed.

The reservoir bottle preferably has a volume that is considerably larger than the volume of the intermediate container. In a preferred embodiment, the intermediate container has the function of detecting the quantity of fluid that has been drawn off the reservoir bottle. Thanks to the intermediate container, the reservoir bottle needs not be fitted with own means for detecting the instant

quantity of fluid it contains, so that the reservoir bottle may have a very simple design.

In another embodiment the fluid drawn off the reservoir bottle is determined by counting the number of dots printed by the inkjet printer. A certain quantity of fluid is used per dot, this quantity may be determined by counting the printed dots.

The methods described are suitable for determining the pigment fluid in particular. To detect the solvent, it is advantageous to simply record the operating time of the inkjet printer and to additionally take into consideration the temperature and possibly other parameters as well.

In a preferred development the signal "reservoir bottle empty" is delivered when the reservoir bottle is empty, the intermediate container however at least partially still full. This means that the inkjet printer can continue to run. Operation may be kept up for an adequate period of time during which the new reservoir bottle may be inserted.

To determine the expiration date, the computer preferably has a time unit that produces an internal date. This internal date is compared with the date indicated in the label. If the indications are not corresponding, the newly inserted reservoir bottle is not accepted and the inkjet printer does not resume

normal operation. When the inkjet printer is not operating normally because of a wrong label, no label at all or the like, a corresponding indication is emitted and the message "wrong input" appears for example on the display of the inkjet printer. The wording of the corresponding message is such that a user can
5 clearly distinguish between a malfunction of the inkjet printer due for example to the failure of a component part and the input of a wrong label.

In another preferred embodiment, the label is machine readable, it has for example been given the form of a universal unit code. The advantage thereof is that the label needs not first be read and entered into the inkjet printer via the keyboard, but that the label is entered mechanically, which is easier. In a particular development the label is read when a new reservoir bottle has been put on the right place in the inkjet printer.

Further advantages and characteristics of the invention will become clear in the claims and in the following description of embodiments that are only
15 examples and are not limiting the scope of the invention, whereas said embodiments are explained in more detail with reference to the drawing.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a schematic representation, substantially a front view of an inkjet printer printing on goods.

Fig. 2 is a representation similar to Figure 1 of an inkjet printer, but in
5 another embodiment.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The ink-jet printer has a computer 20 controlling the internal operating sequences. Additionally it is provided with at least one reservoir bottle 24 accommodated in a holding device 22, said bottle containing a fluid, for example a pigment or a solvent. According to the invention, the reservoir bottle 24 used is of the simplest kind. It has neither windows for light barriers detecting the level nor any mechanical peculiarities nor an unusual stopper. The fluid 30 contained in the reservoir bottle 24 is drawn off by way of a suction pipe 26 incorporating a pump 28 and is conveyed to an installed intermediate container 32. In the embodiment according to Figure 1, said intermediate container is equipped with an arrangement 34 designed to detect the quantity of fluid 30 that has been tapped from the reservoir bottle 24. To this purpose a sensor 34 is arranged in the intermediate container 32, it may be for example a capacitive sensor. Its output is connected to the computer. When the level of fluid 30 that has been detected between two level indicators has dropped inside the intermediate container 32, this fact is communicated to the computer 20 which records the corresponding data. If the intermediate container 32 has been emptied repeatedly and if the number of times it was emptied matches a predetermined quantity of fluid, the computer 20 delivers the signal "reservoir bottle empty". This signal appears for example on the display 36. It may also be delivered acoustically, by emitting a sound for example.

In the state described, the reservoir bottle 24 is empty, the intermediate container 32 however still full enough to have the printing process kept up for still a certain period of time. Now, the emptied reservoir bottle 24 can be replaced by a new, filled reservoir bottle 24. Said new bottle carries a label 38.

5 Said label consists for example of numbers and letters. It is entered into the keyboard 40 of the ink-jet printer. The keyboard 40 is connected to the computer 20. An internal clock that generates an internal date is located in the computer. This date is compared with the date on the label 38. Other comparisons are made. The kind of liquid may for example be recorded in the computer. The label contains this data, too. If, with regard to the kind of liquid, the piece of information read on the label matches the data recorded in the computer, the corresponding test criterion turns positive. If all selected test criteria are positive, normal operation of the ink-jet printer is set free.

15 When the signal "reservoir bottle empty" is delivered, the inkjet printer continues to run normally until the quantity of fluid contained in the intermediate container 32 is used up. Then, operation is stopped by blocking the pump 28 for example. Normal operation is only resumed when a proper label has been entered.

20 In the embodiment according to Figure 2 a scanning device 42 that is connected to the computer 20 is provided in the holding device 22. The scanning device 42 automatically scans a label 38 arranged on the reservoir

bottle 24. In this case, it is no longer necessary to enter the information by hand.

The arrangement for registering the quantity of fluid drawn from the reservoir bottle is embodied in a different way as well. One possibility is to count the number of droplets ejected out of a printhead 44 and printed on a good that has not been illustrated in the drawings herein, the signal "reservoir bottle empty" being emitted upon reaching a certain number of droplets, 50 millions for example. Another possibility is to register and sum up the operating time as well as to determine at least the temperature while the inkjet printer is working. These data are used to know how much fluid, solvent for example, has gone lost during operation. The quantity of fluids that has to be employed anyway, for the printing process for example, is taken into consideration.

In the illustration according to Figure 1, the label 38 can be a bar code as shown in the Figure, which is scanned by an optical scanning device 42. A chip 38 can also be utilized as a label, said chip carrying the relevant data. This chip permanently registers the necessary data, which means that it is not volatile. It may be permanently connected to the reservoir bottle 24. In case the reservoir bottle 24 is recharged, it is overwritten with new information. Additionally it is provided with a transmitting device having its counterpart in the scanning device 42, which is designed here as an appliance for data acquisition. The data can be transmitted in an electromagnetic, magnetic, capacitive or in any other way. In

case of magnetic coupling, the chip 38 has a coil having a mating coil provided in the data acquisition appliance 42 assigned to it. Transmission of the information occurs by inductance. The inductance coupling can thereby also be used to transfer an alternating voltage from the appliance to the chip in order to feed the latter with electrical power.

Data transmission between the chip 38 and the data acquisition appliance 42 can only occur in one direction, that is from the chip 38 toward the data acquisition appliance 42, but it additionally can occur in reverse direction so that the chip is fed with information from the data acquisition appliance 42 which it registers.

The invention relates to the use of a reservoir bottle 24 in an inkjet printer, wherein the reservoir bottle 24 is filled with a fluid 30 required for the operation of the inkjet printer and is provided with a label 38 containing data needed by the computer 20 to operate the inkjet printer.

AMENDED CLAIMS

1. Inkjet printer for printing on goods being provided with

- a computer (20) controlling the operational process,
 - with at least one exchangeable reservoir bottle (24) filled with a previously known quantity of a fluid (30), with a solvent or pigment for example,
 - with an installed intermediate container (32) that is recharged with fluid (30) from the reservoir bottle (24) and
 - with an installed arrangement designed to detect the quantity of fluid (30) drawn from the reservoir bottle (24),
- characterized in that at least two reservoir bottles (24) with various fluids (30) are provided, that the reservoir bottles (24) are provided with a label (38) carrying coded information about the fluid (30) they contain, e.g., an expiration date, the kind of fluid (30), the quantity of fluid (30), its viscosity and so on, that a computer is provided to control the operational processes, that the label (38) is fed into the computer when inserting a new reservoir bottle (24), that the computer (20) is provided with a test program that checks the label (38) fed and that only allows normal operation of the inkjet printer when at least one selected test criterion, e.g., the expiration date, is alright and that the output signal of the arrangement designed to detect the quantity of fluid (30) drawn from the reservoir bottle (24) is present on the computer and that a signal „reservoir bottle empty" is delivered when the previously known quantity of fluid (30) has been drawn from one of the reservoir bottles (24) and that the signal „reservoir bottle empty" is emitted when the reservoir bottle is empty, the intermediate

container (32) being however at least partially still full.

2. Inkjet printer according to claim 1, characterized in that at the same time as the computer (20) emits the signal „reservoir bottle empty", it suspends the tapping of fluid (30) from the reservoir bottle (24) and only allows the tapping of fluid (30) from the new reservoir bottle (24) after a new coded label (38) has been fed.

3. Inkjet printer according to claim 1, characterized in that the volume of the reservoir bottle (24) is greater than the volume of the intermediate container, in particular more than six times the volume of said intermediate container (32).

4. Inkjet printer according to claim 1, characterized in that the volume of the reservoir bottle (24) is more than 10 times the volume of the intermediate container (32).

5. Inkjet printer according to claim 1, characterized in that the computer (20) has a time unit that produces an internal date and that this internal date is compared with the date indicated on the label (38).

6. Inkjet printer according to claim 1, characterized in that the computer (20) is provided with a memory in which the information from the label (38), like the kind of fluid (30), the quantity of fluid (30), its viscosity, are stored and that these data are preferably deleted when a new reservoir bottle (24) is inserted.

7. Inkjet printer according to claim 1, characterized in that, the reservoir bottles (24) are mechanically formed in different ways and that the insertion of a bottle at a place assigned to another bottle with another fluid (30) is mechanically hindered.

8. Inkjet printer according to claim 1, characterized in that the label (38) is machine readable and is a bar code for example.

ABSTRACT

The present invention relates to an inkjet printer for printing on goods, wherein said printer comprises a computer for controlling the operation process, at least one replaceable tank in the shape of a bottle filled with a previously known quantity of a liquid, an intermediate container arranged in the printer and filled with the liquid from the tank as well as a device also arranged in the printer for detecting the quantity of liquid drawn from the taken. This invention is characterized in that the tank includes an identification element comprising a coded piece of information related to the liquid it contains. The identification element is inputted into the computer when a new tank is mounted, while said computer comprises a verification program for checking the inputted identification element and for authorizing normal operation of the inkjet printer only when one at least selected verification criterion is correct, such as the use-by date.

FIG. 1

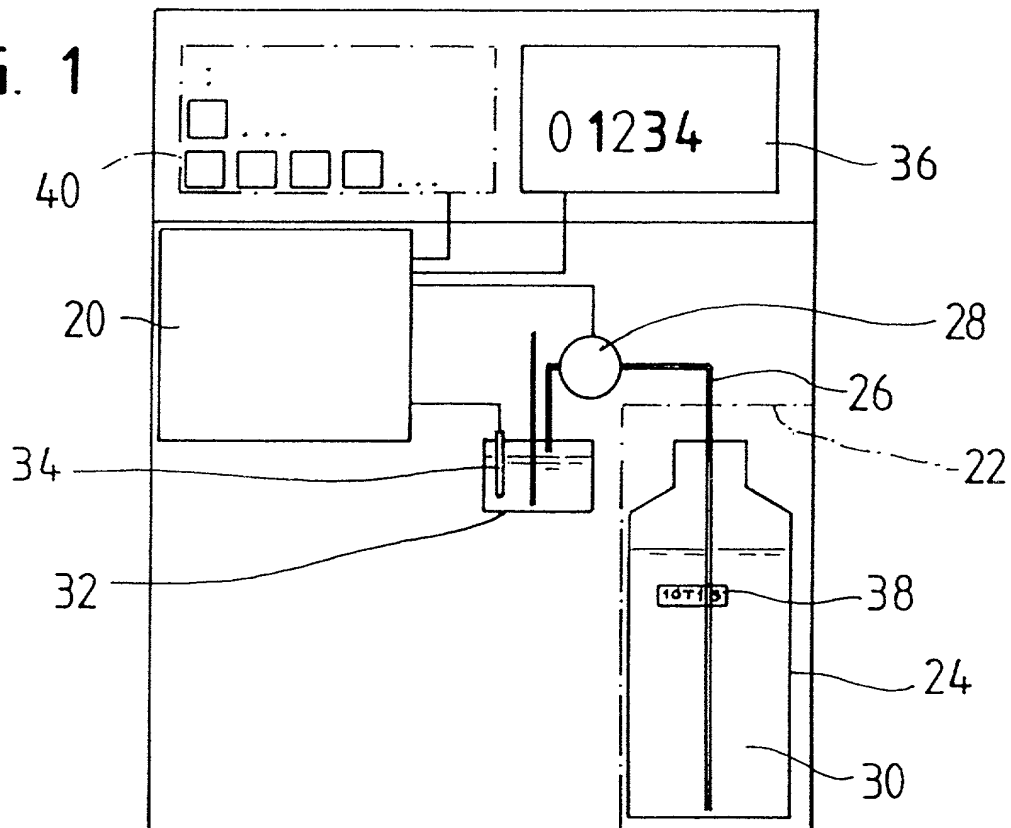
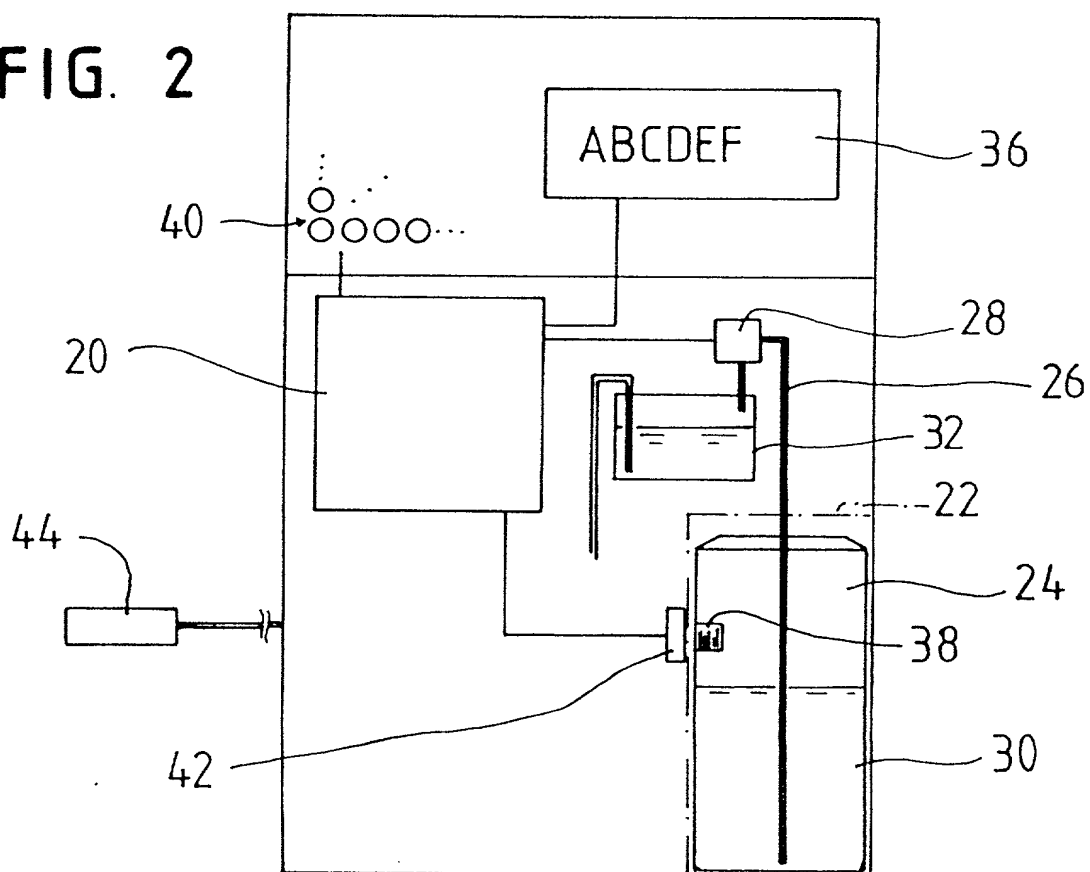


FIG. 2



Declaration and Power of Attorney for Patent Application

Erklärung für Patentanmeldungen mit Vollmacht

German Language Declaration

Als nachstehend benannter Erfinder erkläre ich hiermit an Eides Statt:

daß mein Wohnsitz, meine Postanschrift und meine Staatsangehörigkeit den im nachstehenden nach meinem Namen aufgeführten Angaben entsprechen, daß ich nach bestem Wissen der ursprüngliche, erste und alleinige Erfinder (falls nachstehend ein Name angegeben ist) oder ein ursprünglicher, erster und Miterfinder (falls nachstehend mehrere Namen aufgeführt sind) des Gegenstandes bin, für den dieser Antrag gestellt wird und für den ein Patent für die Erfindung mit folgendem Titel beantragt wird:

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deren Beschreibung hier beigefügt ist, es sei denn (in diesem Falle Zutreffendes bitte ankreuzen), diese Erfindung

wurde angemeldet am _____
unter der US-Anmeldenummer oder unter der
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Vertrags über die Zusammenarbeit auf dem Gebiet
des Patentwesens (PCT)

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_____ abgeändert (falls
zutreffend).

Ich bestätige hiermit, daß ich den Inhalt der oben angegebenen Patentanmeldung, einschließlich der Ansprüche, die eventuell durch einen oben erwähnten Zusatzantrag abgeändert wurde, durchgesehen und verstanden habe.

Ich erkenne meine Pflicht zur Offenbarung jeglicher Informationen an, die zur Prüfung der Patentfähigkeit in Einklang mit Titel 37, Code of Federal Regulations, § 1.56 von Belang sind.

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

the specification of which is attached hereto unless the following box is checked:

☐ was filed on _____
as United States Application Number or PCT
International Application Number
_____ and was amended on
_____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56.

German Language Declaration

Ich beanspruche hiermit ausländische Prioritätsvorteile gemäß Title 35, US-Code, § 119 (a)-(d), bzw. § 365(b) aller unten aufgeführten Auslandsanmeldungen für Patente oder Erfinderurkunden, oder § 365(a) aller PCT internationalen Anmeldungen, welche wenigstens ein Land ausser den Vereinigten Staaten von Amerika benennen, und habe nachstehend durch ankreuzen sämtliche Auslandsanmeldungen für Patente bzw. Erfinderurkunden oder PCT internationale Anmeldungen angegeben, deren Anmeldetag dem der Anmeldung, für welche Priorität beansprucht wird, vorangeht.

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(Frühere ausländische Anmeldungen)

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(Number) (Country)
(Nummer) (Land)

(Number) (Country)
(Nummer) (Land)

Ich beanspruche hiermit Prioritätsvorteile unter Title 35, US-Code, § 119(c) aller US-Hilfsanmeldungen wie unten aufgezählt.

(Application No.) (Filing Date)
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(Application No.) (Filing Date)
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Priority Not Claimed
Priorität nicht beansprucht

21/03/1998
(Day/Month/Year Filed)
(Tag/Monat/Jahr der Anmeldung)

(Day/Month/Year Filed)
(Tag/Monat/Jahr der Anmeldung)

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(Status) (patented, pending, abandoned)
(Status) (patentiert, schwebend, aufgegeben)

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith: (list name and registration number)

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